

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A[[n]] compact optical imaging device suitable for forming optical images of fingerprints ~~of a finger~~, the device comprising:

an optical plate having first and second opposite main faces, and first and second side faces respectively at opposite first and second ends of said plate, a finger-press surface is defined in at least a portion of said first main face ~~situated~~ in the vicinity of [[a]] said first end of the plate ~~constituting a finger-press surface for a finger~~;

at least one light source ~~situated~~ facing a face of said plate at said first end thereof, ~~in order~~ and having an illumination direction directed to illuminate said finger-press surface through the plate; and

imaging means including a focusing lens that ~~possesses~~ has an inlet surface and an outlet surface determining a magnification factor, and that is situated downstream from the optical plate;

wherein said first and second main faces, said face in front of which the light source is situated, and the illumination direction of said light source are arranged mutually in such a manner that ~~the~~ a light beam, emitted by ~~the source and then reaching the~~ a finger pressed against said ~~portion of the first main face in order to~~ finger-press surface illuminated by said light source ~~said finger~~, propagates thereafter inside the plate with multiple reflections alternately on the first and on the second main faces thereof ~~in order to reach the second end of the plate opposite from said first end~~ up to said second side face;

wherein said second end face of said plate ~~has an end face at its second end~~ that is inclined, at least in part, so that the light beam leaves the plate via said inclined end face without being subjected to significant refraction or reflection;

the focusing lens is disposed facing said inclined face of the second end of the plate ~~with its, said focusing lens having an~~ optical axis ~~extending which extends~~ substantially in ~~the~~ a midplane of the plate between said main faces and ~~extending which extends~~ substantially parallel to said inclined face; and

a first mirror is placed facing ~~the~~ an inlet surface of said focusing lens and is oriented ~~in such a manner so~~ as to receive a portion of the light beam ~~coming~~ from said second end face of the second end of the plate and reflect it said portion of the light beam along the optical axis thereof of said focusing lens.

2. (Previously Presented) An optical imaging device according to claim 1, further including a second mirror disposed facing the outlet surface of said focusing lens and oriented in such a manner that the light beam coming from the focusing lens is reflected transversely relative to the plate.

3. (Previously Presented) An optical imaging device according to claim 2, wherein said second mirror is oriented in such a manner that the light beam is reflected in a direction going away from the finger-press surface.

4. (Previously Presented) An optical imaging device according to claim 1, wherein the first and second main faces of the plate are mutually parallel.

5. (Previously Presented) An optical imaging device according to claim 1, wherein the first mirror belongs to a first projecting part fitted on the end face of the second end of the plate, in such a manner as to extend in line with said plate.

6. (Previously Presented) An optical imaging device according to claim 2, wherein the second mirror belongs to a second projecting part fitted on the end face of the second end of the plate in such a manner as to extend in line with said plate.

7. (Previously Presented) An optical imaging device according to claim 1, wherein it further includes a diaphragm situated upstream from and close to the focusing lens.

8. (Previously Presented) An optical imaging device according to claim 1, wherein the focusing lens is secured to the end face of said second end of the plate via support means.

9. (Previously Presented) An optical imaging device according to claim 8, wherein the support means of the focusing lens are arranged to allow the focusing lens to move along its optical axis.

10. (Previously Presented) An optical imaging device according to claims 6, wherein the support means of the lens are constituted in one piece with said second projecting part incorporating the second mirror.

11. (Previously Presented) An optical imaging device according to claim 1, wherein at its first end the plate includes an end face that is inclined at an acute angle relative to said first main face, and in that the light source is situated facing said inclined end face.

12. (Previously Presented) An optical imaging device according to claim 1, wherein at said finger-press portion of the first main face of the plate, at least one side face of the plate is inclined at an angle that is acute relative to said first main face, and in that the light source is situated facing said inclined side face.

13. (Previously Presented) An optical imaging device according to claim 12, wherein both opposite side faces of the plate are inclined, and in that two light sources are situated facing respective ones of said two inclined side faces.

14. (Previously Presented) An optical imaging device according to claim 11, wherein the at least one inclined side face of the plate situated towards the first end thereof is curved in the thickness of the plate, with its concave face facing outwards.

15. (Previously Presented) An optical imaging device according to claim 1, wherein the light source is not a point source, presenting a significant surface area and being placed facing the bottom main face of the plate, substantially facing said finger-press portion provided on the top main face, and directed towards it.

16. (Previously Presented) An optical imaging device according to claim 15, wherein the light source is a matrix of light-emitting diodes, with a ground surface interposed between the light source and the bottom face of the plate.